AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

LISTING OF CLAIMS:

1.   (Currently Amended) An apparatus for ~~redundantly~~ redundant image encoding ~~a predetermined region of an image~~, the apparatus comprising:

a slice modeling unit which determines ~~the~~ structures of slices to be used in encoding ~~the~~ an image and predetermined regions to be redundantly encoded so that image data of [[a]] each predetermined region of the image to be redundantly encoded is contained in a plurality of slices;

a slice allocation unit which allocates image data of each region of [[an]] the image to the plurality of slices;

a picture header encoding unit which encodes information required to decode the plurality of encoded slices and generates picture header information; and

a slice encoding unit which encodes the image in units of slices according to the picture header information.

2.   (Original) The apparatus of claim 1, wherein the slice modeling unit forms the slices in units of a series of macroblocks.

3.   (Currently Amended) The apparatus of claim 1, wherein the slice modeling unit divides the image into at least one rectangular first region and ~~the other~~ a second region and determines the structures of the slices so that each of the first and second regions is included in at least one independent slice.

4.   (Currently Amended) The apparatus of claim 1, wherein the slice modeling unit forms the slices in units of a set of macroblocks at certain positions of the ~~inputted~~ image.

5.   (Currently Amended) The apparatus of claim 1, wherein the slice modeling unit determines the structures of the slices in which the image data will be included to be identical ~~structure~~ structures.

6.   (Currently Amended) The apparatus of claim 1, wherein the slice modeling unit determines ~~a plurality of structures as~~ the structures of the slices in which the image data will be included to be a plurality of non-identical structures.

7.   (Currently Amended) The apparatus of claim 1, wherein the slice modeling unit determines the regions to be redundantly encoded based on regions[[,]] predetermined by a user as being [[an]] important ~~region~~ regions from the image~~, as regions to be redundantly encoded~~.

8.   (Currently Amended) The apparatus of claim 1, wherein the slice modeling unit determines ~~the~~ <u>the</u> regions to be redundantly encoded by detecting regions where motions are actively performed, from the image.

9.   (Currently Amended) The apparatus of claim 1, wherein the slice modeling unit determines ~~the~~ <u>an</u> amount of ~~the~~ <u>each</u> region to be redundantly encoded according to an error rate and a transmission bandwidth which occur in a transmission environment, and an encoding efficiency of the slice encoding unit.

10.   (Currently Amended) The apparatus of claim 1, wherein the slice modeling unit comprises:

a slice structure modeling portion which determines the structures of the plurality of slices to be used for image encoding; and

a redundant encoding modeling portion which determines ~~the position~~ <u>positions</u> and amount of <u>the</u> regions to be redundantly encoded from the image using the plurality of slices.

11.   (Currently Amended) The apparatus of claim 1, wherein the slice allocation unit determines ~~the~~ sizes of the plurality of slices according to ~~the~~ <u>an</u> amount of the regions to be redundantly encoded.

12.   (Currently Amended) The apparatus of claim 1, wherein the slice allocation unit allocates the image data to the plurality of slices so that each of the

slices includes ~~both~~ image data of the regions to be redundantly encoded and image data of regions not to be ~~not~~ redundantly encoded.

13. (Original) The apparatus of claim 1, wherein the slice allocation unit allocates the image data to the plurality of slices so that at least one slice includes image data of only a region to be redundantly encoded.

14. (Currently Amended) The apparatus of claim 1, wherein the picture header encoding unit encodes the picture header information containing ~~the~~ structure, position, and size of each slice.

15. (Currently Amended) The apparatus of claim 1, wherein the slice encoding unit comprises:

a slice header encoding portion which generates a slice header containing information used to encode a macroblock in the slice;

a temporal/spatial predictive encoding portion which performs temporal/spatial predictive encoding in units of slices of the image;

a transform quantization portion which transforms the temporal/spatial predictively-encoded data into a frequency ~~region~~ domain and quantizes the data; and

an entropy-encoding portion which entropy-encodes the quantized data.

16.   (Original) The apparatus of claim 15, wherein the slice header includes flag information which indicates whether the slice to be encoded includes only regions to be redundantly encoded.

17.   (Currently Amended) The apparatus of claim 1, wherein, when the plurality of slices in which the image data of the regions to be redundantly encoded are contained are encoded, the slice encoding unit makes the redundantly-encoded image data ~~on~~ of one slice be included in ~~the~~ other slices.

18.   (Original) The apparatus of claim 1, wherein the slice encoding unit quantizes and encodes each of the slices in which the regions to be redundantly encoded are included, at different quantization intervals.

19.   (Currently Amended) The apparatus of claim 1, wherein the slice encoding unit encodes only main information containing a macroblock header and a motion vector of the regions to be redundantly encoded in ~~one~~ a first slice and encodes all information of the regions to be redundantly encoded in ~~the other~~ a second slice among two slices including the image data of the region to be redundantly encoded.

20.   (Currently Amended) The apparatus of claim 1, wherein the slice encoding unit encodes only main information containing a macroblock header, a motion vector, and a discrete cosine (DC) coefficient contained in a discrete cosine transform (DCT) coefficient of the regions to be redundantly encoded in ~~one~~ a first

slice and encodes all information of the regions to be redundantly encoded in ~~the other~~ a second slice among two slices including the image data of the regions to be redundantly encoded.

21.   (Currently Amended) An apparatus for redundant image decoding, the apparatus comprising:

a picture header decoding unit which decodes picture header information containing ~~the~~ structures, positions, and sizes of slices in a bitstream where image data are encoded;

a slice construction unit which determines the structures and positions of a plurality of slices to be decoded according to the picture header information;

a slice decoding unit which decodes an image in units of slices according to the picture header information; and

an image construction unit which disposes [[a]] the decoded slice image according to the structure and position of the ~~slice~~ slices determined by the slice construction unit and restores and outputs the image;

wherein redundantly-encoded predetermined regions of at least two slices of the plurality of slices constructed by the slice construction unit are overlapped on each other.

22.   (Currently Amended) The apparatus of claim 21, wherein the slice decoding unit comprises:

an entropy-decoding portion which entropy-decodes ~~an inputted~~ the bitstream in units of slices according to the position and size information of the slices;

an inverse-transform quantization portion which performs inverse-quantization

of <u>the</u> entropy-decoded image data, performs inverse-transform of the inversely-

quantized image data into a temporal ~~region~~ <u>domain</u>, and generates temporal/spatial

predictively-encoded image data; and

an image restoration portion which restores ~~an~~ <u>the</u> image by compensating

the temporal/spatial predictively-encoded image data.

23. (Currently Amended) The apparatus of claim 21, wherein, when

information which indicates that a corresponding slice is composed of only ~~redundant~~

<u>redundantly-encoded</u> regions is contained in a header of the slice, the slice decoding

unit decodes the slice composed of only the ~~redundant~~ <u>redundantly-encoded</u> regions

only if errors occur in another decoded ~~slices~~ <u>slice</u> including the ~~redundant~~

<u>redundantly-encoded</u> regions.

24. (Currently Amended) The apparatus of claim 21, wherein, when errors

occur in a redundantly-encoded region during image decoding, the image

construction unit constructs ~~an~~ <u>the</u> image using another ~~slices~~ <u>slice</u> including the

image data of the redundantly-encoded region.

25. (Currently Amended) The apparatus of claim [[21]] <u>22</u>, wherein, when

errors do not occur in all of redundantly-decoded ~~portions~~ <u>regions</u>, the image

construction unit constructs ~~an~~ <u>the</u> image using the ~~portions~~ <u>regions</u> decoded with

~~the~~ <u>a</u> smallest quantization interval.

26.   (Currently Amended) A method for redundantly encoding a predetermined region of an image, the method comprising:

(a) determining the structures of slices to be used in encoding the image and predetermined regions to be redundantly encoded so that image data of [[a]] each predetermined region of the image to be redundantly encoded is contained in a plurality of slices;

(b) allocating image data of each region of an image to the plurality of slices;

(c) encoding information required to decode the plurality of encoded slices and generating picture header information; and

(d) encoding the image in units of slices according to the picture header information.

27.   (Original) The method of claim 26, wherein in (a), the slices are composed in units of a series of macroblocks.

28.   (Currently Amended) The method of claim 26, wherein in (a), the image is divided into at least one first rectangular region and the other a second region, and the structures of the slices are determined so that each of the first and second regions is included in at least one independent slice.

29.   (Currently Amended) The method of claim 26, wherein in (a), the slices are composed of a set of macroblocks at certain positions of the inputted image.

30. (Currently Amended) The method of claim 26, wherein in (a), the structures of the slices in which the image data will be included are determined to be the identical ~~one~~ structures.

31. (Currently Amended) The method of claim 26, wherein in (a), a ~~plurality of structures are determined as~~ the structures of the slices in which the image data will be included are determined to be a plurality of non-identical structures.

32. (Currently Amended) The method of claim 26, wherein in (a), regions, predetermined by a user as an important region from the image, are determined as the regions to be redundantly encoded.

33. (Currently Amended) The method of claim 26, wherein in (a), the regions to be redundantly encoded are determined by detecting regions where motions are actively performed, from the image.

34. (Currently Amended) The method of claim 26, wherein in (a), ~~the~~ an amount of ~~the~~ each region to be redundantly encoded is determined according to an error rate and a transmission bandwidth which occur in a transmission environment, and an encoding efficiency of an encoder for encoding the ~~slice~~ slices.

35. (Currently Amended) The method of claim 26, wherein (a) comprises:

determining the structures of the plurality of slices to be used for image

encoding; and

determining ~~the position~~ positions and amount of the regions to be

redundantly encoded from the image using the plurality of slices.

36.   (Currently Amended) The method of claim 26, wherein in (b), ~~the~~ sizes

of the plurality of slices are determined according to ~~the~~ an amount of the regions to

be redundantly encoded.

37.   (Currently Amended) The method of claim 26, wherein in (b), the

image data are allocated to the slices so that each of the slices includes ~~both the~~

image data of the regions to be redundantly encoded and ~~the~~ image data of regions

not to be ~~not~~ redundantly encoded.

38.   (Original) The method of claim 26, wherein in (b), the image data are

allocated to the slices so that at least one slice includes image data of only a region

to be redundantly encoded.

39.   (Currently Amended) The method of claim 26, wherein in (c), the

picture header information containing ~~the~~ structure, position, and size of each slice is

encoded.

40.   (Currently Amended) The method of claim 26, wherein (d) comprises:

generating a slice header containing information used to encode a

macroblock in the slice;

performing temporal/spatial predictive encoding in units of slices of the image;

transforming the temporal/spatial predictively-encoded data into a frequency

~~region~~ domain and quantizing the data; and

entropy-encoding the quantized data.

41.   (Original) The method of claim 40, wherein the slice header includes

flag information which indicates whether the slice to be encoded includes only

regions to be redundantly encoded.

42.   (Currently Amended) The method of claim 26, wherein in (d), when the

plurality of slices in which the image data of the regions to be redundantly encoded

are contained are encoded, image data redundantly encoded on one slice is to be

included in ~~the~~ other slices.

43.   (Original) The method of claim 26, wherein in (d), each of the slices in

which the regions to be redundantly encoded are included is quantized and encoded

at different quantization intervals.

44.   (Currently Amended) The method of claim 26, wherein in (d), among

two slices including the image data of the regions to be redundantly encoded, only

main information containing a macroblock header and a motion vector of the regions

to be redundantly encoded is encoded in ~~one~~ a first slice, and all information of the

regions to be redundantly encoded are encoded in ~~the other~~ a second slice.

45. (Currently Amended) The method of claim 26, wherein in (d), among two slices including the image data of the regions to be redundantly encoded, only main information containing a macroblock header, a motion vector, and a discrete cosine (DC) coefficient contained in a discrete cosine transform (DCT) coefficient of the regions to be redundantly encoded is encoded in one a first slice, and all information of the regions to be redundantly encoded are encoded in the other a second slice.

46. (Currently Amended) A method for redundant image decoding, the method comprising:

(a) decoding picture header information including the structures, positions, and sizes of slices in a bitstream where image data are encoded;

(b) determining the structures and positions of a plurality of slices to be decoded according to the picture header information;

(c) decoding an image in units of slices according to the picture header information; and

(d) disposing [[a]] the decoded slice image according to the structure and position of the slice slices determined in (b) and restoring and outputting the image;

wherein redundantly-encoded predetermined regions of at least two slices of the plurality of slices constructed in (b) are overlapped on each other.

47. (Currently Amended) The method of claim 46, wherein (c) comprises:

entropy-decoding an inputted the bitstream in units of slices according to the position and size information of the slices;

performing inverse-quantization of the entropy-decoded image data,

performing inverse-transform of the inversely-quantized image data into a temporal

~~region~~ domain, and generating temporal/spatial predictively-encoded image data;

and

restoring ~~an~~ the image by compensating the temporal/spatial predictively-

encoded image data.

48.   (Currently Amended) The method of claim 46, wherein in (c), when

information which indicates that a corresponding slice is composed of only ~~redundant~~

redundantly-encoded regions is included in a header of the slice, the slice composed

of only the ~~redundant~~ redundantly-encoded regions are decoded only if errors occur

in another decoded ~~slices~~ slice including the ~~redundant~~ redundantly-encoded

regions.

49.   (Currently Amended) The method of claim 46, wherein in (d), when

errors occur in a redundantly-encoded region during image decoding, ~~an~~ the image

is restored using another ~~slices~~ slice including the redundantly-encoded region.

50.   (Currently Amended) The method of claim 46, wherein in (d), when

errors do not occur in all of redundantly-decoded ~~portions~~ regions, ~~an~~ the image is

restored using the ~~portions~~ regions decoded with ~~the~~ a smallest quantization interval.

51.   (Currently Amended) A computer readable ~~recording~~ medium <u>encoded</u>

<u>with a computer program comprising computer-executable instructions for executing</u>

~~where~~ the method for redundant image encoding of claim 26 ~~is recorded as an~~

~~executable program code~~.

52.   (Currently Amended) A computer readable ~~recording~~ medium <u>encoded</u>

<u>with a computer program comprising computer-executable instructions for executing</u>

~~where~~ the method for redundant image decoding of claim 46 ~~is recorded as an~~

~~executable program code~~.